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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/755,147	01/08/2001	Cletus N. Welch	1582A1	4411
24959	7590	03/03/2004	EXAMINER	
PPG INDUSTRIES INC INTELLECTUAL PROPERTY DEPT ONE PPG PLACE PITTSBURGH, PA 15272			BISSETT, MELANIE D	
		ART UNIT	PAPER NUMBER	
			1711	

DATE MAILED: 03/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/755,147	WELCH ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Melanie D. Bissett	1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on 12 November 2003.

2a) This action is **FINAL**.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 1-25 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-25 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_

5) Notice of Informal Patent Application (PTO-152)

6) Other: \_\_\_\_\_

1. The rejections presented in the non-final Office action dated 16 July 2003 have been maintained.

***Claim Rejections - 35 USC § 112***

2. From a prior Office action:

Claims 1-25 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claims have been amended to limit the polycarbonate polyol to comprise less than 10 mole percent of cycloaliphatic diol. Although the specification provides support for including cycloaliphatic polyols in the polycarbonate polyol component, the specification gives no guidance as to minimum or maximum amounts to be included. Thus, one of ordinary skill in the art reading the present specification would not know to limit a cycloaliphatic component to be less than 10 mol% of the polycarbonate polyol component.

***Claim Rejections - 35 USC § 103***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 1-7 and 9-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over PPG Industries, Inc. in view of Ammons '529.
5. From a prior Office action:

PPG discloses photochromic polyurethane coatings having a Fischer microhardness of 50-150 N/mm<sup>2</sup>, ΔOD of 0.15 after 30 seconds, ΔOD of 0.28 after 8 minutes, and a bleach rate of less than 50 seconds (p. 5 line 3-p. 6 line 4). The coatings are prepared by reacting an isocyanate with a hard-segment-producing polyol and a soft-segment-producing polyol (p. 12 lines 13-20) with an optional catalyst (p. 11 line 25-p. 12 line 7) in the presence of a photochromic compound (p. 23 lines 13-30). Preferred isocyanates include isophorone diisocyanate blocked with methyl ethyl ketoxime (p. 10 lines 22-32), and preferred photochromic compounds include those of the applicant's claim 17 (p. 23 lines 13-30).

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The reference teaches the use of soft-segment-producing polyols including polyester or polyether polyols with molecular weights of 500-10,000 g/mol (p. 15 lines 1-3; p. 15 line 31-p. 16 line 1), also teaching the use of hard-segment-producing polyols including polyacrylic polyols with molecular weights of 500-50,000 g/mol (P. 13 lines 10-17; p. 20 lines 19-27). PPG suggests the use of copolymers of (meth)acrylic monomers with the ethylenically unsaturated monomers of the applicant's claim 11 for hard-segment-producing polyols (p. 21 lines 7-25). However, PPG does not suggest the use of polycarbonate polyols having the claimed molecular weight for forming the polyurethanes.

Ammons teaches urethane compositions produced by reacting a diisocyanate with a low molecular weight active hydrogen-containing material and optionally a polycarbonate diol (abstract). The materials have improved haze values, UV resistance, and clarity (col. 1 line 68-col. 2 line 4). Polycarbonate diols having a molecular weight of 700-2,000 are included in the formulation as desired to improve impact resistance of the resulting material (col. 3 lines 1-20). Ammons notes a conventional process for polycarbonate formation, where the aliphatic and cycloaliphatic diols are reacted with bischloroformate derivatives (col. 3 lines 46-49). Hexanediol and other linear aliphatic diols are noted (col. 3 lines 13-17).

One of ordinary skill in the art would recognize that the aliphatic character of the diols used to form the polycarbonate diols would yield a soft, flexible segment in the resulting polymer. Therefore, it is the examiner's position that it would have been *prima facie* obvious to use the polycarbonate diols of Ammons' teaching as soft-segment-producing diols in PPG's polyurethanes. It is also the examiner's position that, because of the similarity of the applicant's urethane compositions with those of the combined references, the coating resulting from PPG and Ammons would possess the applicant's claimed swell properties. Motivation for choosing the polycarbonate diols would have been to form polyurethane coatings having improved impact resistance.

Regarding the applicant's claimed primer and protective hardcoats, PPG notes the use of both primers and protective coatings, where the primer is applied between the substrate and urethane coating (p. 29 lines 1-3). The protective coatings applied to the urethane coatings include organosilane coatings (p. 29 lines 11-17). PPG also teaches the use of the applicant's claimed substrates (p. 27 lines 8-17), preferring thermoplastic polycarbonate substrates for use in optical materials. Ophthalmic lenses having refractive indices of 1.48-1.75 are noted (p. 33 lines 9-18).

Additionally, it is noted that PPG specifically notes the preference for 1,4-diazabicyclo[2.2.2]octane, dibutyltin diacetate, and dibutyltin dilaurate catalysts (p. 12 lines 5-7).

### ***Response to Arguments***

6. In response to the applicant's arguments that the specification shows support for the amendment, it is acknowledged that applicants may amend the claims based on the

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specification. However, the specification must show support for all amendments made. The examiner maintains her position that one of ordinary skill in the art reading the present specification would not be guided to limit a cycloaliphatic component to be less than 10 mol% of the polycarbonate polyol component.

7. Regarding the applicant's arguments that Ammons does not teach using less than 10 mol% of a cycloaliphatic polyol, the rejection has been altered to include Ammons '529 as a secondary reference. Ammons '529 indicates the use of either linear or cycloaliphatic polyols in the invention. Thus, no cycloaliphatic polyols are needed to obtain the improved impact resistance.

8. In response to applicant's argument that the Ammons reference is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, both references are directed toward polyurethane materials useful in optical lense materials. The Ammons reference teaches transparent polyurethane materials useful in optical lenses, where polycarbonate polyols are useful for improving impact resistance. The primary reference indicates that impact resistance is important to the formed optical elements by the suggestion of using abrasion-resistant coatings or other protective coatings. Since both references are directed toward polyurethane materials useful in optical applications, it is the examiner's position that it would have

been *prima facie* obvious to use a polycarbonate diol in the PPG reference to improve the impact resistance of the inventive coating.

***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie D. Bissett whose telephone number is (571) 272-1068. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mdb



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